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10/552,482	12/07/2006	Ulrich Gerber	125198	7245
27049	7590	06/30/2010		
OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850			EXAMINER ADMASU, ATNAF S	
			ART UNIT 1796	PAPER NUMBER
			NOTIFICATION DATE 06/30/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### **DETAILED ACTION**

1. Claims 1, 3-16 and 18-21 are pending as amended on 28 December 2009 and claims 2 and 17 being cancelled.
2. The text of those sections of Title 35, US Code not included in this action can be found in a prior Office Action.

### ***Response to Arguments***

3. Applicant's arguments, filed 11 June 2010, have been fully considered but they are not persuasive.

Applicant argues that US Patent 5,688,876's (Ando hereinafter) amino compounds are limited to dimethylaminopropylamine, diethylaminopropylamine, dibutylaminopropylamine and dimethylaminoethylamine, and mixtures thereof and such amino compounds are not polyamines; however, Ando also teaches the use of an active amino compound having at least two NH<sub>2</sub> groups in the molecule in which examples include diethylenetriamine, hexamethylenediamine, isophoronediamine and diaminodicyclohexylmethane (column 13, lines 48-61).

Applicant further argues that Ando uses a polyamine as an additive of the hardener, and not as a part of the Mannich molecule; however, Ando teaches a composition comprising the Mannich base and an active amino compound mixed with each other (column 14, lines 46-48).

With respect to Applicant's assertion that Ando does not specifically disclose 3,5-xyleneol (claim 6), it is noted that claim 6 requires the limitation of the

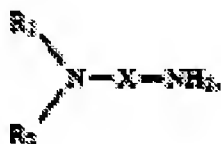
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tertiary amine of Formula (II) and not xylenol. 3,5-xylenol is claimed in claims 1 and 14 with  $R_1$  is H or  $\text{CH}_3$ . Ando, on the other hand, discloses the use of m-cresol ( $R_1=\text{H}$ ) as phenolic derivative (column 15, line 20).

***Claim Rejections - 35 USC § 102/103***

4. Claims 1, 3-16 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being unpatentable over US Patent 5,688,876 (Ando hereinafter).

Ando teaches a curable epoxy resin composition comprising (i) an epoxy resin and (II) a specific Mannich base (Abstract). The Mannich base is prepared by reacting an aromatic compound having at least one phenolic hydroxyl group in the molecule with a carbonyl compound having at least one carbonyl group in the molecule and an amino compound represented by the formula:



wherein  $R_1$  and  $R_2$  each represents an alkyl group having 1 to 5 carbon atoms, and  $X$  represents an alkylene group having 1 to 5 carbon atoms (column 2, lines 10-24).

Ando further teaches that the aromatic compound has at least one unsubstituted reactive site, i.e., at least one hydrogen atom, on the aromatic ring, and preferable examples of such compounds include not only phenol and alkyl

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phenols (column 12, 14-19). Specific examples of the alkyl phenols include ortho-, meta- and para-cresols and xlenol (column 12, lines 20-22). Among the monohydric aromatic compounds, phenol and cresol are particularly preferable in practical use (column 12, lines 26-27).

Ando further discloses since an aromatic compound generally has a reactive site on the aromatic ring at a position ortho or para to the phenolic hydroxyl group, it is preferable to use an aromatic compound, particularly a phenol, having at least one unsubstituted site, i.e., hydrogen atom, at a position(s) ortho and/or para to the hydroxyl group(s). The reaction product, i.e., the Mannich base obtained by the use of such an aromatic compound is excellent in compatibility with the epoxy resin (column 12, lines 43-52).

Ando further teaches the carbonyl compound having at least one carbonyl group in the molecule is a compound having at least one  $\text{-CHO}$  or at least one



in the molecule (column 12, lines 52-60). Examples of the carbonyl compounds include formaldehyde (column 12, lines 61-62).

Ando further disclose Examples of the amino compounds include dimethylaminopropylamine, diethylaminopropylamine, dibutylaminopropylamine and dimethylaminoethylamine. Among them, dimethylaminopropylamine and diethylaminopropylamine are particularly preferable in practical use. These amino compounds can be used not only each alone but also as a mixture of two or more of them (column 13, lines 7-13).

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In a typical example, Ando discloses that diethylaminopropylamine and m-cresol were fed into a flask and formaldehyde was drop wise added to the resulting mixture which eventually produced a Mannich base which had a viscosity of 28 poise at 25°C (column 15, lines 19-39). M-cresol reads on Formula I where  $R^1=H$  as instantly claimed.

### ***Conclusion***

5. The **Finality** of the previous Office Action is maintained.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATNAF ADMASU whose telephone number is (571)270-5465. The examiner can normally be reached on M-F 8:00-5:30, Flexible Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair->

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/ASA/  
Atnaf Admasu  
Art Unit 1796  
June 24, 2010

/Timothy J. Kugel/  
Primary Examiner, Art Unit 1796